

DISTRICT 6
KENTON CO., KY. / HAMILTON CO., OH.
COVINGTON – CINCINNATI
BRENT SPENCE BRIDGE
REPAIR PLANS



LATITUDE: 39°05'27" NORTH
LONGITUDE: 84°31'22" WEST

[illegible]

ESTIMATE OF BRIDGE QUANTITIES																		
BID ITEM CODE	21650NN	08526	02403	24879EC	02650													
BID ITEM	Bolt Replacement	Conc Class M Full Depth Patch	Remove Concrete Masonry	Steel Repair	MAINTAIN AND CONTROL TRAFFIC													
UNIT	EA	CUYD	CUYD	EACH	LS													
Finger Dam Bolt Replacement	1738																	
Finger Dam Strap Plate		2.5	2.5	1														
Finger Dam Support Member				1														
Cracked Support Channel				1														
BRIDGE TOTALS	1738	2.5	2.5	3	1													

NOTES

PAYMENT FOR STRUCTURAL STEEL REPAIRS: THE UNIT PRICES BID FOR ALL STRUCTURAL STEEL REPAIR ITEMS LISTED IN THE ESTIMATE OF BRIDGE QUANTIIES SHALL BE FULL PAYMENT FOR ALL STRUCTURAL STEEL, BOLTS, WASHERS, SHIM PLATES, WELDING AND WELD MATERIALS, DRILLING, REAMING, CUTTING, REMOVING DETERIORATED METAL, LABOR, ACCESS, AND INCIDENTALS NECESSARY TO COMPLETE EACH ITEM OF WORK IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

COMPLETION OF THE STRUCTURE: THE CONTRACTOR IS REQUIRED TO COMPLETE THE STRUCTURE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. MATERIAL, LABOR, OR CONSTRUCTION OPERATIONS NOT OTHERWISE SPECIFIED, SHALL BE INCLUDED IN THE BID ITEM MOST APPROPRIATE TO THE WORK INVOLVED.

ITEM NUMBER
06-17.09
BRIDGE ID
059B00046N

REVISION		DATE
DATE: SEPTEMBER, 2020		CHECKED BY
DESIGNED BY: D. RUST		R. DAMON
DETAILED BY: J. ROSE		R. DAMON
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY KENTON		
ROUTE I-71 / I-75	CROSSING OHIO RIVER	
ESTIMATE OF QUANTITIES		
PREPARED BY		SHEET NO. S2
PALMER ENGINEERING CO.		DRAWING NO. 28039

GENERAL NOTES

SPECIFICATIONS: REFERENCES TO THE SPECIFICATIONS ARE TO THE 2019 EDITION OF THE KENTUCKY DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION INCLUDING ANY CURRENT SUPPLEMENTAL SPECIFICATIONS. ALL REFERENCES TO THE AASHTO SPECIFICATIONS ARE TO THE CURRENT EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, WITH INTERIMS. ALL REFERENCES TO THE ASTM STANDARDS ARE TO THE CURRENT EDITION OF THE ASTM STANDARD SPECIFICATIONS, WITH INTERIMS.

MATERIALS: ASTM OR AASHTO SPECIFICATIONS, CURRENT EDITION, AS DESIGNATED IN THE PLANS AND SPECIFICATIONS SHALL GOVERN THE MATERIALS FURNISHED.

DIMENSIONS: DIMENSIONS SHOWN ON THESE PLANS ARE TAKEN FROM THE ORIGINAL CONSTRUCTION CONTRACT PLANS AND SHOP DRAWINGS. THEY DO NOT NECESSARILY REFLECT REVISIONS MADE DURING CONSTRUCTION OR REPAIRS PREVIOUSLY INSTALLED. THE CONTRACTOR SHALL VERIFY ELEVATIONS AND DIMENSIONS, INCLUDING THICKNESS OF PARTS AND FASTENER SIZE/SPACING, WITH FIELD MEASUREMENTS PRIOR TO ORDERING MATERIALS OR FABRICATING STEELWORK. ALL PLAN DIMENSIONS ARE FOR A NORMAL TEMPERATURE OF 60°F. LAYOUT DIMENSIONS ARE HORIZONTAL DIMENSIONS.

BRIDGE PLANS: A COPY OF AVAILABLE ORIGINAL BRIDGE CONSTRUCTION PLANS AND SHOP DRAWINGS WILL BE MADE AVAILABLE TO THE SUCCESSFUL BIDDER UPON WRITTEN REQUEST. THE COMPLETENESS OF THESE DRAWINGS IS NOT GUARANTEED, AND NO RESPONSIBILITY IS ASSUMED BY THE DEPARTMENT OF HIGHWAYS FOR THEIR ACCURACY.

ON SITE INSPECTION: EACH CONTRACTOR SUBMITTING A BID FOR THIS WORK SHALL MAKE A THOROUGH INSPECTION OF THE BRIDGE AND THE WORK SITE PRIOR TO SUBMITTING A BID AND SHALL BE THOROUGHLY FAMILIARIZED WITH EXISTING CONDITIONS SO THAT WORK CAN BE EXPEDITIOUSLY PERFORMED AFTER A CONTRACT IS AWARDED. A SUITABLE METHOD OF PERFORMING THE WORK DESCRIBED HEREIN SHOULD BE INVESTIGATED. SUBMISSION OF A BID WILL BE CONSIDERED EVIDENCE OF THIS INSPECTION HAVING BEEN MADE. ANY CLAIMS FROM SITE CONDITIONS WILL NOT BE HONORED BY THE DEPARTMENT OF HIGHWAYS.

VERIFYING FIELD CONDITIONS: PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE THE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK; HOWEVER THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK. IN ADDITION, THE OVERRUN AND UNDERRUN FORMULAS MAY BE APPLIED PROVIDED THAT THE REQUIREMENTS OF ARTICLE 104.02.02 OF THE STANDARD SPECIFICATIONS ARE SATISFIED.

COOPERATION BY CONTRACTOR: THE CONTRACTOR IS ADVISED THAT ADDITIONAL CONTRACTS MAY BE LET ADJACENT TO OR WITHIN THE PROJECT LIMITS PRIOR TO THE COMPLETION OF THIS PROJECT. CONTRACTORS WORKING ON THE SAME PROJECT OR ADJACENT PROJECTS SHALL COOPERATE WITH EACH OTHER.

MAINTAINING TRAFFIC: SEE SPECIAL NOTE FOR MAINTAIN AND CONTROL TRAFFIC.

RIVER NAVIGATION: CONTINUOUS MAINTENANCE AND SAFETY OF RIVER NAVIGATION THROUGHOUT THE TERM OF THE PROJECT SHALL BE A PRIME CONSIDERATION. ALL WORK INVOLVING THE REMOVAL OF THE EXISTING BRIDGE DECK SHALL CEASE WHEN THERE IS APPROACHING RIVER TRAFFIC. THIS WORK SHALL NOT RESUME UNTIL THE RIVER TRAFFIC IS CLEAR OF THE BRIDGE AREA.

AT LEAST 30 DAYS IN ADVANCE OF BEGINNING CONSTRUCTION, THE SUCCESSFUL CONTRACTOR SHALL SUBMIT TO THE DEPARTMENT (FOR SUBMITTAL TO THE COAST GUARD) A WORK PLAN FOR PERFORMING WORK OVER THE OHIO RIVER. THIS WORK PLAN SHALL INCLUDE BUT IS NOT LIMITED TO METHODS FOR CONTAINING DEBRIS, BELOW DECK ACCESS PROCEDURES, AND MAINTENANCE OF EXISTING NAVIGATIONAL TRAFFIC DURING CONSTRUCTION.

THE CONTRACTOR MUST ADVISE THE COAST GUARD OF THE CONTRACTOR'S PROPOSED SCHEDULE OF WORK AT LEAST 10 DAYS PRIOR TO THE COMMENCEMENT OF ANY FIELD OPERATIONS. THE NOTIFICATION SHALL BE ADDRESSED TO:

WESTERN RIVERS BRIDGE BRANCH
EIGHTH COAST GUARD DISTRICT
1222 SPRUCE STREET, SUITE 2, 102D
ST. LOUIS, MISSOURI 63103
PHONE: 314-269-2378

FALL PROTECTION: PROVIDE FLOORING FOR WORKERS IN SITUATIONS WHERE THE DANGER FROM A FALL IS COMPOUNDED BY TRAFFIC AND FOR PROTECTION TO RIVER TRAFFIC BELOW. IF TEMPORARY FLOORING IS NECESSARY, THE FLOORING IS TO BE DESIGNED USING THE SUM OF DEAD LOAD AND LIVE VERTICAL LOADS. INCLUDE 50 PSF ON HORIZONTAL SURFACES AND THE WEIGHT OF ANY MATERIAL OR EQUIPMENT THAT IS PLACED OR ALLOWED TO FALL DURING CONSTRUCTION OR DEMOLITION IN THE LIVE LOAD COMPUTATION. SUBMIT THE FLOORING DESIGN ALONG WITH THE FALSEWORK DESIGN TO THE ENGINEER FOR APPROVAL. CONSIDER ALL PHASES OF FURNISHING AND REMOVING THE FLOORING AS INCIDENTAL TO THE CONTRACT. THIS ITEM MAY BE CONSIDERED IN ADDITION TO ANY REQUIREMENT SET FORTH IN SUBSECTION 107.01.01 OF THE SPECIFICATIONS.

EXISTING STEEL REINFORCEMENT: THE COST OF CUTTING, BENDING, AND CLEANING EXISTING STEEL REINFORCEMENT SHALL BE INCIDENTAL TO THE REPAIR ITEM BEING COMPLETED.

MILL TEST REPORTS: NOTARIZED MILL TEST REPORTS SHALL BE FURNISHED IN TRIPPLICATE TO THE DEPARTMENT SHOWING THAT ALL STRUCTURAL STEEL CONFORMS TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS.

WELDING SPECIFICATIONS: ALL WELDING AND WELDING MATERIALS EXCEPT FOR REINFORCEMENT, SHALL CONFORM TO 'JOINT SPECIFICATION ANSI/AASHTO/AWS D1.5-2015 BRIDGE WELDING CODE'. MODIFICATION AND ADDITIONS AS STATED ON THE PLANS SHALL SUPERSEDE THE JOINT SPECIFICATIONS.

PROHIBITED FIELD WELDING: EXCEPT WHERE SHOWN IN THE PLANS, NO WELDING OF ANY NATURE SHALL BE PERFORMED ON THE LOAD CARRYING MEMBERS OF THE BRIDGE WITHOUT THE WRITTEN CONSENT OF THE DIRECTOR, DIVISION OF BRIDGE MAINTENANCE, AND THEN ONLY IN THE MANNER AND AT THE LOCATIONS DESIGNATED IN THE AUTHORIZATION.

WELDING REINFORCEMENT: THE WELDING AND WELD MATERIAL SHALL CONFORM TO THE 'RECOMMENDED PRACTICES FOR WELDING REINFORCING STEEL', AMERICAN WELDING SOCIETY SPECIFICATIONS, CURRENT EDITION. NO DIRECT PAYMENT SHALL BE MADE FOR WELDING OR WELD MATERIAL, BUT THE COST OF THESE ITEMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE REPAIR BEING COMPLETED.

WELDING PROCEDURES: QUALIFICATION TEST OF ALL WELDING PROCEDURES, WHEN REQUIRED BY AWS, SHALL BE COMPLETED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO THE FINAL APPROVAL OF THE SHOP DRAWINGS AND THE START OF THE FABRICATION.

REMOVAL OF EXISTING RIVETS AND BOLTS: THE CONTRACTOR WILL BE PERMITTED TO REMOVE RIVETS AND BOLTS IN ANY MANNER THAT DOES NOT DAMAGE ADJACENT STRUCTURAL STEEL. THIS MAY INCLUDE MECHANICAL REMOVAL OR OTHER METHODS APPROVED BY THE ENGINEER. USE OF CUTTING TORCHES WILL NOT BE PERMITTED.

HIGH STRENGTH BOLT CONNECTIONS: UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL BOLTED CONNECTIONS SHALL BE ASTM F3125 GRADE A325 HIGH STRENGTH BOLTS, A563DH NUTS, AND F436 FLAT WASHERS. OPEN HOLES SHALL BE 1/16 INCH GREATER THAN THE BOLT DIAMETER, UNLESS OTHERWISE NOTED. BOLT THREADS SHALL BE EXCLUDED FROM THE SHEAR PLANE IN ALL BOLTED CONNECTIONS, UNLESS OTHERWISE NOTED.

TYPE I MECHANICALLY GALVANIZED BOLTS SHALL BE USED AS DESCRIBED IN AASHTO M 164, ALL HIGH STRENGTH BOLTED CONNECTIONS ARE TO BE INSTALLED USING 'DIRECT TENSION INDICATORS' (DTI's) IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND ASTM F959. ALL DTI's SHALL BE MECHANICALLY ZINC COATED. INSTALLATION DETAILS OF THE DTI's SHALL BE SHOWN ON THE SHOP PLANS.

SHOP DRAWINGS: THE CONTRACTOR IS TO SUBMIT DETAILED SHOP DRAWINGS AND MATERIAL SPECIFICATIONS FOR ANY DETAILS OR MATERIALS THAT VARY FROM THESE PLANS TO THE DEPARTMENT FOR APPROVAL IN ACCORDANCE WITH SECTION 607.03.01 OF THE STANDARD SPECIFICATIONS. WHEN ANY CHANGES ARE PROPOSED BY THE FABRICATOR TO THE SUPPLIER, THE SHOP DRAWINGS REFLECTING THESE CHANGES SHALL BE SUBMITTED TO THE DEPARTMENT THROUGH THE CONTRACTOR.

RESIDUAL LEAD: RESIDUAL LEAD PAINT MAY STILL BE ON THE STRUCTURE. THE CONTRACTOR IS ADVISED TO TAKE ALL NECESSARY PROTECTIVE MEASURES INCLUDING WORKER SAFETY AND ENVIRONMENTAL REGULATIONS WHEN PERFORMING ALL WORK SPECIFIED IN THE CONTRACT. THE DEPARTMENT WILL NOT CONSIDER ANY CLAIMS BASED ON RESIDUAL LEAD PAINT.

CLEANING AND PAINTING:
CLEAN AND PRIME EXISTING STRUCTURAL STEEL. ALL EXISTING FAYING SURFACES WHERE NEW STEEL IS TO BE INSTALLED SHALL BE CLEANED AND RECEIVE THE PRIME COAT AS SPECIFIED IN THE SPECIAL NOTE FOR BRIDGE CLEANING AND PAINTING BEFORE ANY NEW STEEL IS INSTALLED. LEVEL OF CLEANING SHALL BE TO AN SSPC-SP 15 (COMMERCIAL GRADE POWER TOOL CLEANING). ALL POWER TOOLS SHALL BE EQUIPPED WITH VACUUM SHROUDS AND FITTED WITH HEPA FILTERS AT THE AIR EXHAUSTS. MAINTAIN AND OPERATE ALL VACUUM SHROUDED POWER TOOLS TO COLLECT GENERATED DEBRIS.

PREPARE AND PRIME NEW STRUCTURAL STEEL. NEW STRUCTURAL STEEL SHALL RECEIVE SHOP SURFACE PREPARATION AND SHOP APPLIED PRIME COAT IN ACCORDANCE WITH THE SPECIAL NOTE FOR BRIDGE CLEANING AND PAINTING. FAYING SURFACES SHALL RECEIVE ONLY THE PRIME COAT SPECIFIED. NECESSARY TOUCH UP / REPAIR OF THE SHOP APPLIED PRIME COAT ON THE NEW STEEL MAY BE PERFORMED IN THE FIELD. FINISH COATINGS WILL BE FIELD APPLIED.

ALL COSTS FOR CLEANING AND PAINTING THE NEW AND EXISTING STEEL SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE MOST APPLICABLE BID ITEMS.

DISPOSAL OF MATERIALS: ALL MATERIALS AND DEBRIS REMOVED FROM OR BENEATH THE BRIDGE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE RIGHT-OF-WAY.

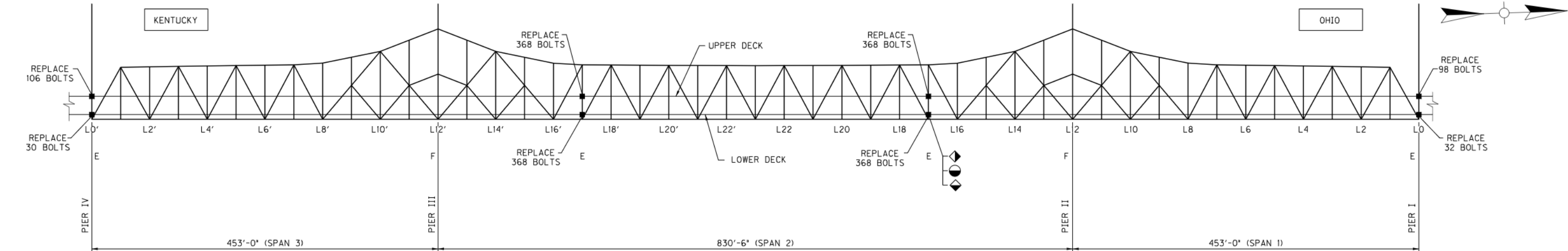
DAMAGE OUTSIDE CONSTRUCTION LIMITS: ANY AREA THAT IS DISTURBED OUTSIDE THE LIMITS OF THE CONSTRUCTION DURING THE LIFE OF THE PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, SHOULD SUCH DAMAGE RESULT FROM THE CONTRACTOR'S ACTIONS.

DAMAGE TO THE STRUCTURE: THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY AND EXPENSE FOR REPAIR OF ANY AND ALL DAMAGES TO THE STRUCTURE, SHOULD SUCH DAMAGE RESULT FROM THE CONTRACTOR'S ACTIONS. AFTER COMPLETION OF ALL OPERATIONS, THE STRUCTURE AND SITE SHALL BE LEFT IN A CONDITION THAT IS IN ACCORDANCE WITH SECTION 105.12 OF THE SPECIFICATIONS.

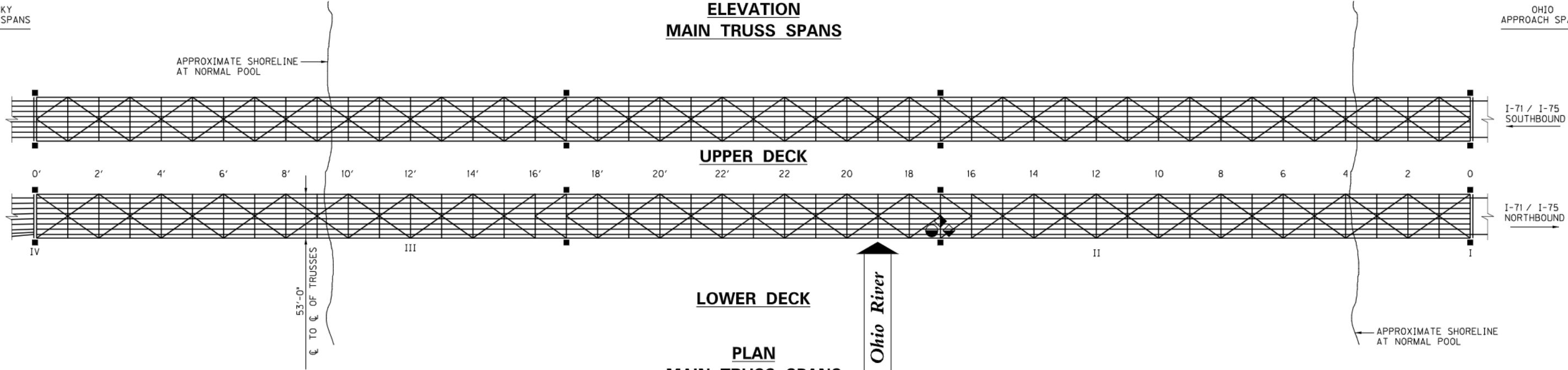
UTILITY PROTECTION: IF PRESENT, ANY ACTIVE UTILITY DUCTS AND ELECTRICAL CONDUIT SHALL BE ADEQUATELY PROTECTED. ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

ITEM NUMBER	
06-17.09	
BRIDGE ID	
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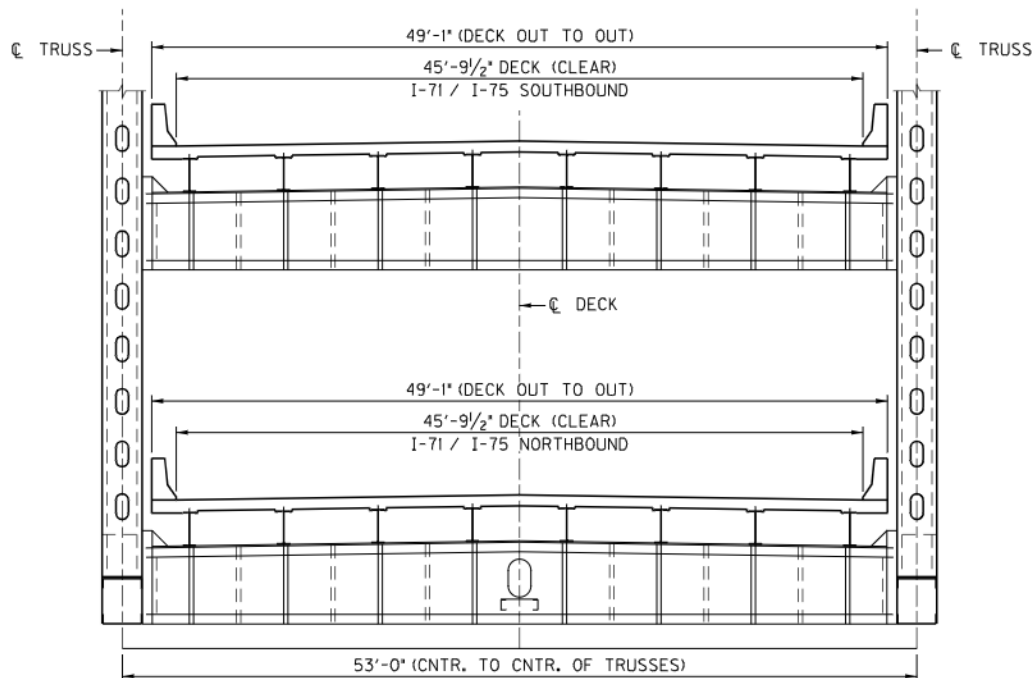
REVISION	
DATE: SEPTEMBER, 2020	CHECKED BY
DESIGNED BY: D. RUST	J. RUFENER
DETAILED BY: J. ROSE	D. RUST
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS	
COUNTY KENTON	
ROUTE I-71 / I-75	CROSSING OHIO RIVER
GENERAL NOTES	
PREPARED BY	
PALMER ENGINEERING CO.	
SHEET NO. S3	
DRAWING NO. 28039	



**ELEVATION
MAIN TRUSS SPANS**



**PLAN
MAIN TRUSS SPANS**



MAIN TRUSS TYPICAL SECTION

- LEGEND**
- EXPANSION
 - FIX
 - FINGER JOINT BOLT REPLACEMENT
 - FINGER DAM STRAP PLATES REPAIR
 - CRACKED SUPPORT CHANNEL REPAIR
 - FINGER DAM SUPPORT MEMBER REPAIR

ITEM NUMBER
06-17.09
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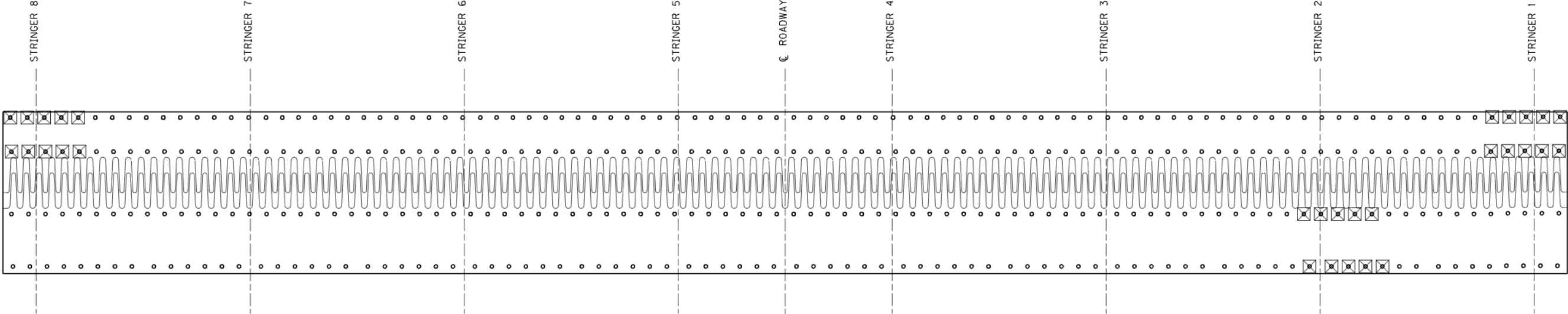
REVISION		DATE
DATE: SEPTEMBER, 2020	CHECKED BY	
DESIGNED BY: R. DAMON	D. RUST	
DETAILED BY: J. ROSE	D. RUST	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY KENTON		
ROUTE I-71 / I-75	CROSSING OHIO RIVER	
LAYOUT - REPAIR LOCATIONS		
PREPARED BY PALMER ENGINEERING CO.		SHEET NO. S4
		DRAWING NO. 28039

NOTES

- 1. SEE SHEET S9 FOR FINGER DAM BOLT INSTALLATION DETAILS.
- 2. LOCATION OF TRUSS STRINGERS IS APPROXIMATE.

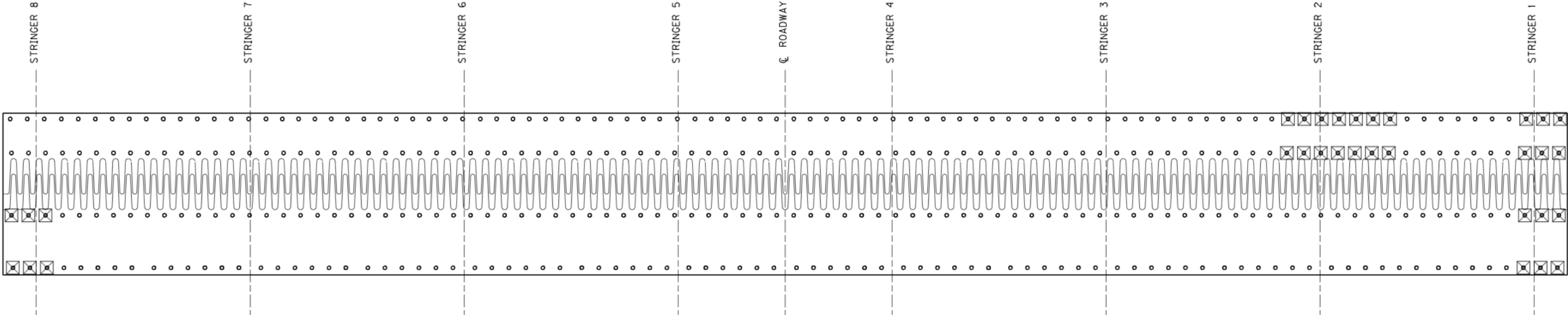
LEGEND

☒ - DENOTES BOLT TO BE REPLACED



LOWER DECK – PP0'

30 BOLTS TO BE REPLACED
ALL BOLTS ARE 8½" IN LENGTH.

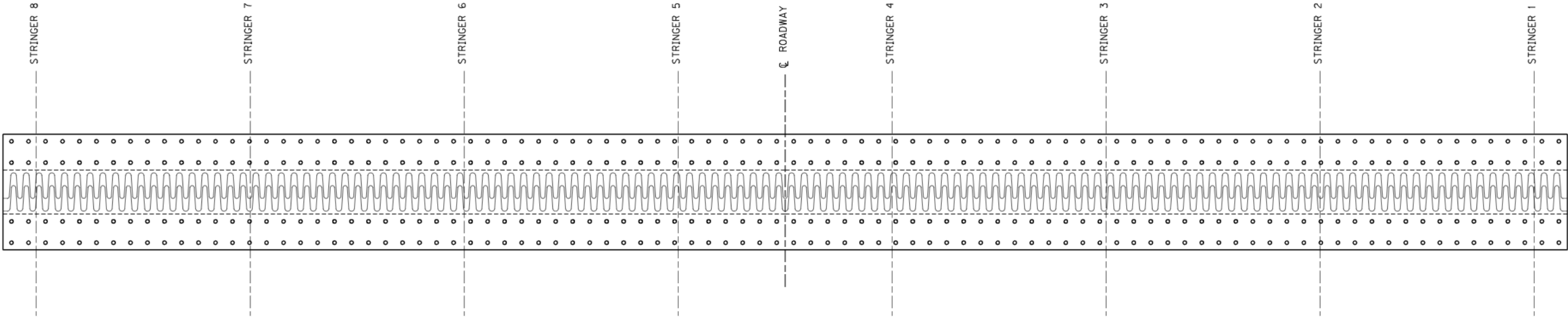


LOWER DECK – PP0

32 BOLTS TO BE REPLACED
ALL BOLTS ARE 8½" IN LENGTH.

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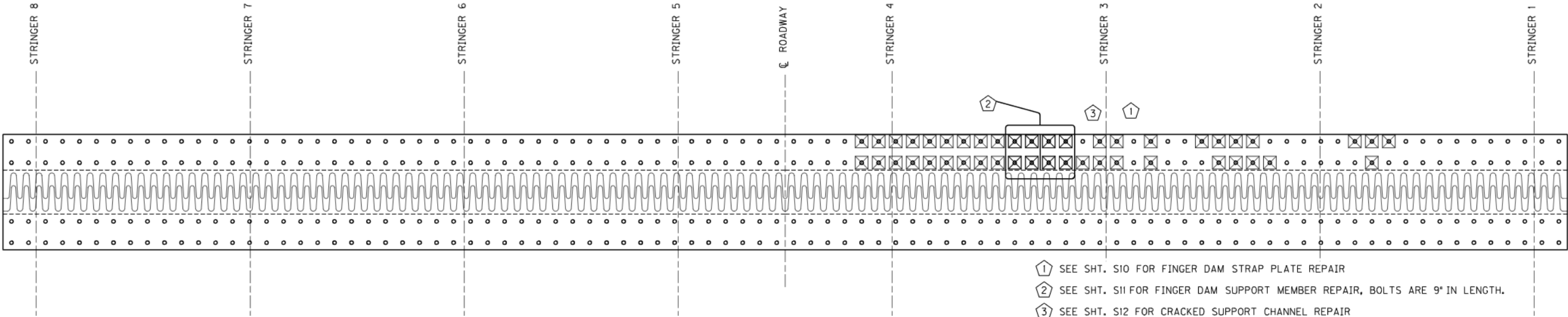
REVISION		DATE
DATE: SEPTEMBER, 2020	CHECKED BY	
DESIGNED BY: R. DAMON	D. RUST	
DETAILED BY: J. ROSE	D. RUST	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY KENTON		
ROUTE	CROSSING	
I-71 / I-75	OHIO RIVER	
FINGER DAM BOLT REPLACEMENT		
PREPARED BY		SHEET NO. S5
PALMER ENGINEERING CO.		DRAWING NO. 28039



LOWER DECK – PP17'

368 BOLTS TO BE REPLACED

ALL BOLTS TO BE REPLACED.
ALL BOLTS ARE 8" IN LENGTH.



LOWER DECK – PP17'

368 BOLTS TO BE REPLACED

ALL BOLTS TO BE REPLACED.
THOSE REPLACED IN 2018 EMERGENCY REPAIRS TO
BE GIVEN TO KYTC DISTRICT 6 FOR FUTURE USE.
ALL BOLTS ARE 8" IN LENGTH UNLESS OTHERWISE NOTED.
(360 - 8" AND 8 - 9")

- ① SEE SHT. S10 FOR FINGER DAM STRAP PLATE REPAIR
② SEE SHT. S11 FOR FINGER DAM SUPPORT MEMBER REPAIR, BOLTS ARE 9" IN LENGTH.
③ SEE SHT. S12 FOR CRACKED SUPPORT CHANNEL REPAIR

NOTES

- SEE SHEET S9 FOR FINGER DAM BOLT INSTALLATION DETAILS.
- LOCATION OF TRUSS STRINGERS IS APPROXIMATE.

LEGEND

- ☒ - BOLT RECENTLY REPLACED IN 2018 EMERGENCY REPAIRS. TO BE REPLACED.
BOLT AND LOCK NUT TO BE GIVEN TO KYTC DISTRICT 6 FOR FUTURE USE.

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DATE: SEPTEMBER, 2020	CHECKED BY	
DESIGNED BY: R. DAMON	D. RUST	
DETAILED BY: J. ROSE	D. RUST	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY KENTON		
ROUTE	CROSSING	
I-71 / I-75	OHIO RIVER	
FINGER DAM BOLT REPLACEMENT		
PREPARED BY		SHEET NO. S6
PALMER ENGINEERING CO.		DRAWING NO. 28039

NOTES

- SEE SHEET S9 FOR FINGER DAM BOLT INSTALLATION DETAILS.
- LOCATION OF TRUSS STRINGERS IS APPROXIMATE.

LEGEND

☒ - DENOTES BOLT TO BE REPLACED

* PROVIDE 10 ADDITIONAL 18½" BOLTS,
AND INSTALL THEM AT LOCATIONS DESIGNATED
BY THE ENGINEER.

BOLTS ARE 18½"
IN LENGTH
*

UPPER DECK - PP0'

106 BOLTS TO BE REPLACED
ALL BOLTS ARE 8½" IN LENGTH UNLESS OTHERWISE NOTED.
(73 - 8½" AND 33 - 15½")

BOLTS ARE 15½" IN LENGTH.

UPPER DECK - PP0

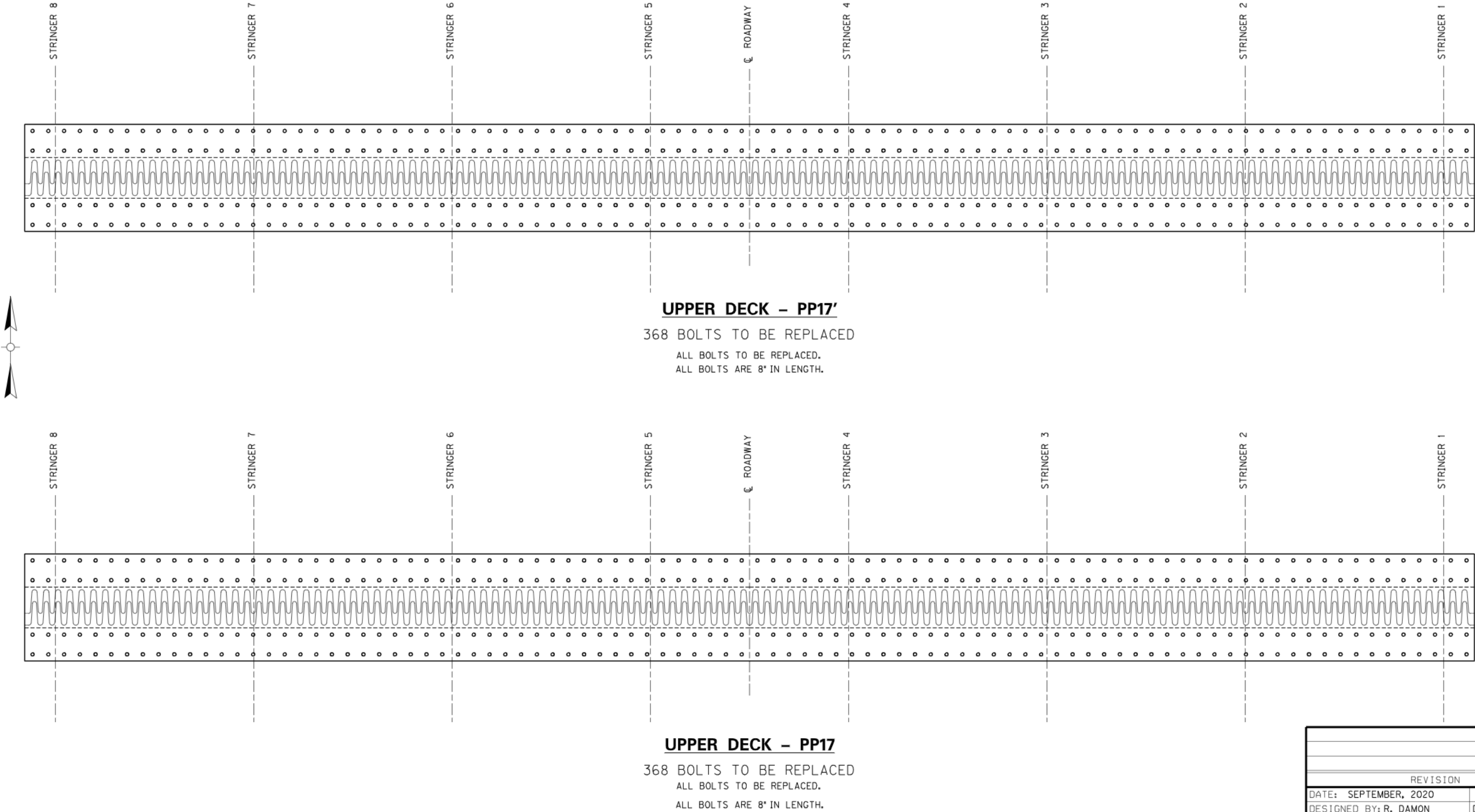
98 BOLTS TO BE REPLACED
ALL BOLTS ARE 8½" IN LENGTH UNLESS OTHERWISE NOTED.
(78 - 8½" AND 20 - 18½")

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06-17.09
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DATE: SEPTEMBER, 2020	CHECKED BY	
DESIGNED BY: R. DAMON	D. RUST	
DETAILED BY: J. ROSE	D. RUST	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY KENTON		
ROUTE	CROSSING	
I-71 / I-75	OHIO RIVER	
FINGER DAM BOLT REPLACEMENT		
PREPARED BY		SHEET NO.
PALMER ENGINEERING CO.		S7
		DRAWING NO.
		28039

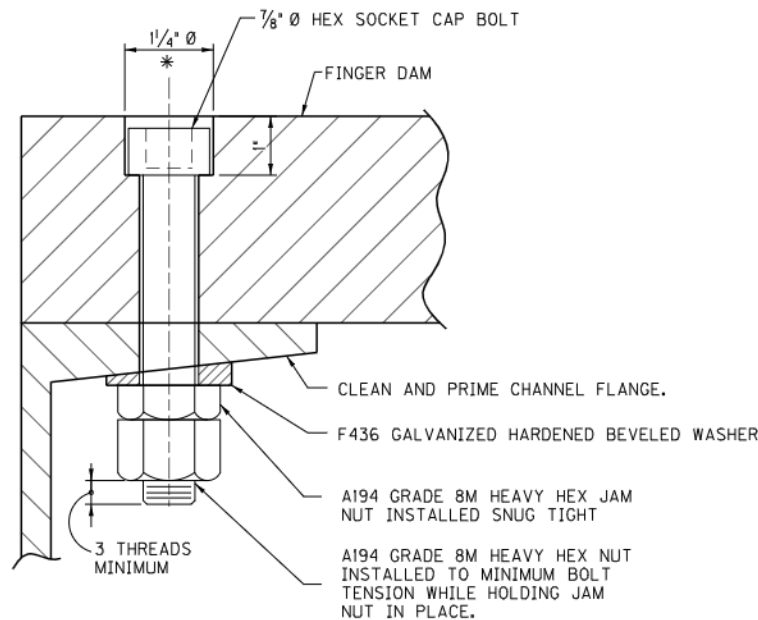
NOTES

- 1. SEE SHEET S9 FOR FINGER DAM BOLT INSTALLATION DETAILS.
- 2. LOCATION OF TRUSS STRINGERS IS APPROXIMATE.



ITEM NUMBER	KENTON		
06-17.09	ROUTE	CROSSING	
	I-71 / I-75	OHIO RIVER	
	FINGER DAM BOLT REPLACEMENT		
BRIDGE ID	PREPARED BY		SHEET NO.
059B00046N	PALMER ENGINEERING CO.		S8
			DRAWING NO.
			28039

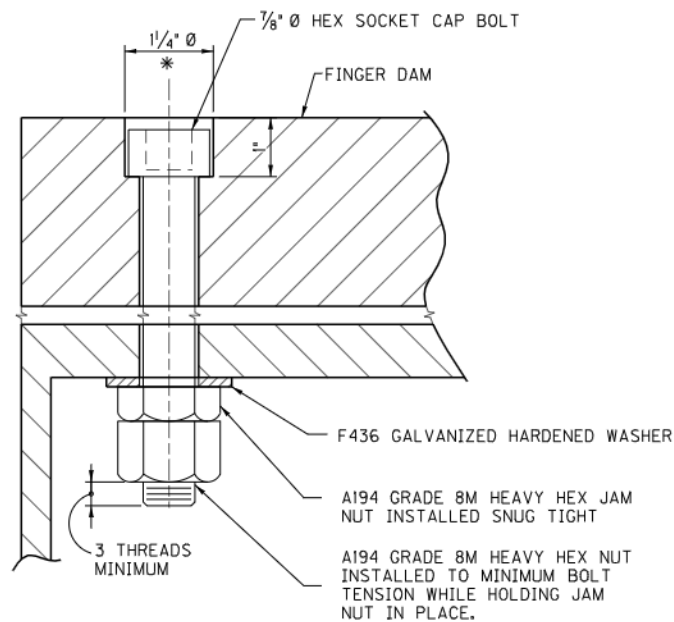
* THE CONTRACTOR IS ADVISED THAT THE STANDARD $\frac{7}{8}$ " \varnothing HEX SOCKET CAP BOLT HEAD DIAMETER IS WIDER THAN THE $\frac{1}{4}$ " \varnothing COUNTERBORED HOLES IN THE FINGER DAM PLATES. ADDITIONAL MACHINING OF BOLT HEADS OR FINGER DAM PLATES MAY BE REQUIRED.



NOTE: THREAD LENGTH TO BE 4" MINIMUM.

REPLACEMENT FINGER DAM BOLTS

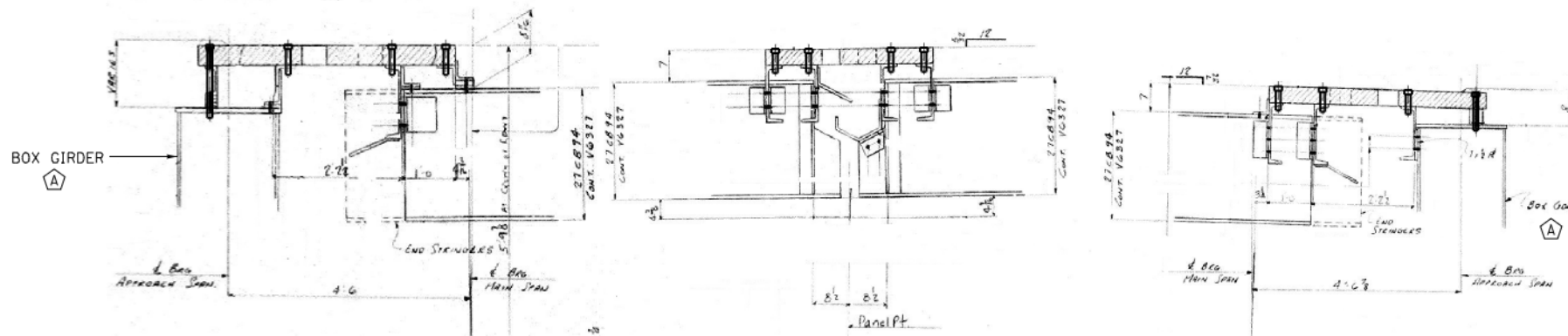
(CHANNEL CONNECTIONS)



NOTE: THREAD LENGTH TO BE 6" MINIMUM.

REPLACEMENT FINGER DAM BOLTS

(BOX GIRDER CONNECTIONS)



UPPER DECK PP 0

(SHOP PLANS SECTION A)

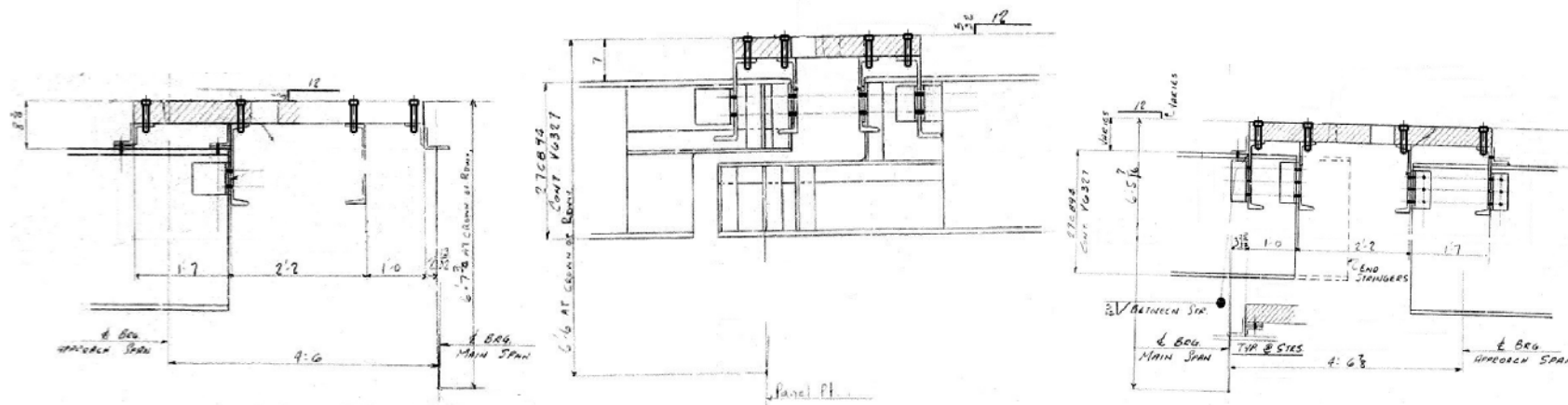
UPPER DECK PP 17 AND 17'

(SHOP PLANS SECTION C)

UPPER DECK PP 0'

(SHOP PLANS SECTION G)

A REPLACEMENT OF FINGER DAM BOLTS CONNECTING THROUGH BOX GIRDER TOP FLANGES WILL REQUIRE ACCESS INTO THE BOX GIRDERS.



LOWER DECK PP 0

(SHOP PLANS SECTION B)

LOWER DECK PP 17 AND 17'

(SHOP PLANS SECTION D)

LOWER DECK PP 0'

(SHOP PLANS SECTION H)

NOTES:

- FINGER DAM BOLT REPLACEMENT:** Work shall include maintaining and controlling traffic, removal of existing bolts, nuts, and washers, preparation of the existing surface, and furnishing and installing new bolts, nuts, and washers for the finger dams as shown on these plans. This work shall include any labor, materials, equipment and any other incidentals necessary to complete the work. Any materials removed shall not be allowed to fall into the river and must be disposed of to the satisfaction of the Engineer. The Contractor shall be responsible for any damage caused by falling materials. Existing fasteners shall be removed by mechanical means, or other methods approved by the Engineer. Any damage to the remaining structure resulting from the Contractor's operation shall be repaired by the Contractor to the satisfaction of the Engineer at no cost to the Department.
- MAINTAIN AND CONTROL TRAFFIC:** Finger dam bolts shall only be replaced in lanes closed to traffic. Lanes above / below the work area to be closed as necessary to facilitate bolt replacement.
- REMOVAL OF EXISTING BOLTS, NUTS, AND WASHERS:** Mechanically remove the bolts, nuts, and washers as indicated on the plans.
- PREPARE THE SURFACE:** Mechanically clean, and prime the existing surfaces as directed by the general notes.
- INSTALL NEW BOLTS, NUTS, AND WASHERS :** Install ASTM F837 grade 316 hex drive bolts with F436 galvanized hardened beveled washers at the channel connections and F436 galvanized hardened washers at box girder connections, and A194 grade 8M heavy hex jam nuts. The jam nuts shall be installed snug tight as defined by the Standard Specifications. Install the A194 grade 8M heavy hex nuts by holding the jam nut in place and tightening the heavy hex nut to minimum bolt tension as defined by the Standard Specifications. See sheets S5-S8 for bolt lengths and locations.
- DETAILS FROM ORIGINAL SHOP PLANS:** Note that the sections shown on this sheet are from page 6 of the original shop drawings. An overlay has been placed on the deck which required the finger joints to be raised. Therefore the bolt lengths shown in the original shop plans are too short. The bolt lengths shown on sheets S5-S8 take the overlay into consideration.

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DETAILED BY: J. ROSE		R. DAMON	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS			
COUNTY			
KENTON			
ROUTE		CROSSING	
I-71 / I-75		OHIO RIVER	
FINGER DAM BOLT REPLACEMENT			
PREPARED BY		SHEET NO.	
PALMER ENGINEERING CO.		S9	
		DRAWING NO.	
		28039	

NOTES:

1.

FINGER DAM STRAP PLATES: Work shall include maintaining and controlling traffic, removal of existing concrete, removal of welded bolts and plates, installing new strap plates, applying structural adhesive to existing concrete, and installing concrete repair patch as shown in the plans. This work shall include any labor, materials, equipment and any other incidentals necessary to complete the work. Any materials removed shall not be allowed to fall into the river and must be disposed of to the satisfaction of the Engineer. The Contractor shall be responsible for any damage caused by falling debris. Steel shall be removed by mechanical means, or other methods approved by the Engineer. Any damage to the remaining structure resulting from the Contractor's operation shall be repaired by the Contractor to the satisfaction of the Engineer at no cost to the Department.
2.

MAINTAIN AND CONTROL TRAFFIC: This work shall only be performed with the right two lanes of the lower deck closed to traffic.
3.

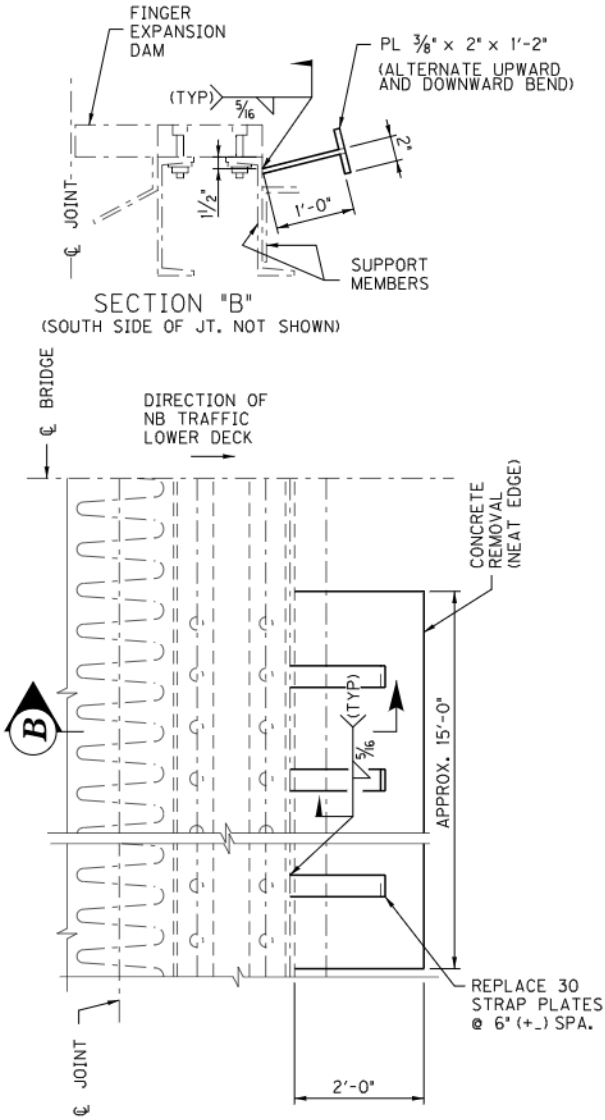
REMOVAL OF EXISTING CONCRETE: Remove the reinforced concrete deck and emergency patch to the extents shown in the plans or as directed by the Engineer and dispose of this material away from the bridge site. Any damage to the remaining existing structure resulting from the Contractor's operation shall be repaired by the Contractor to the satisfaction of the Engineer at no cost to the Department. Existing concrete shall be removed to the limits shown by drilling, chipping, or other methods approved by the Engineer. The concrete shall be removed without allowing broken concrete to drop into the river. The Contractor shall be responsible for any damage caused by falling concrete.
- The perimeter portions of the concrete to be removed shall be saw cut to a depth of one inch before removal begins. The surfaces presented as a result of the removal shall be reasonably true and even with sharp, straight corners that will permit constructing a neat and workmanlike joint with the new construction. Existing reinforcement bars are to extend from the remaining concrete into new concrete. The concrete shall be removed so as to leave the projecting bars clean and undamaged. Repair or replace any damaged or severely corroded steel reinforcement as directed by the Engineer at no additional cost to the Department.
4.

REMOVAL OF WELDED BOLTS AND PLATES: Mechanically remove all existing strap plates and welded bolts within the concrete removal limits. Mechanically clean the vertical surface of the Finger Expansion Dam and support members with hand held power tools. The bolts and plates shall be removed without being dropped into the river. The contractor shall be responsible for any damage caused by falling debris.
5.

INSTALL NEW STRAP PLATES: Install new Finger Expansion Dam strap plates as shown in these plans. Fillet welds shall be 2" long, minimum.
6.

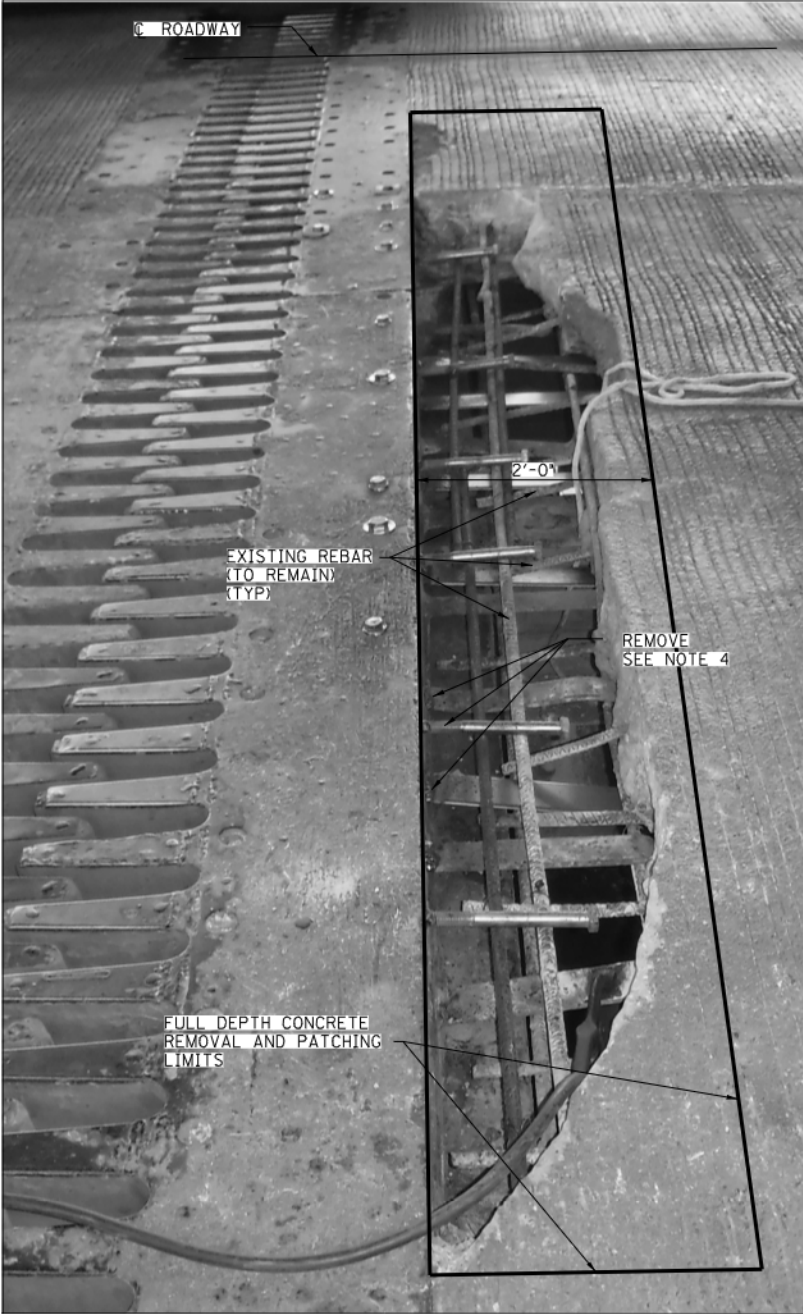
BONDING TO EXISTING CONCRETE USING STRUCTURAL ADHESIVES: Bond proposed plastic concrete to existing hardened concrete in all locations using a Type V Epoxy Resin or other approved structural adhesive as prescribed in Section 826 of the Specifications. Follow the manufacturer's recommended application instructions.
7.

INSTALL CONCRETE REPAIR PATCH: Place, finish, and cure concrete patch in accordance with the manufacturer's recommendations. Patch material shall be on the KYTC List of Approved Materials for 'Rapid Hardening Repair Patch' or 'Very Rapid Hardening Repair Patch'.



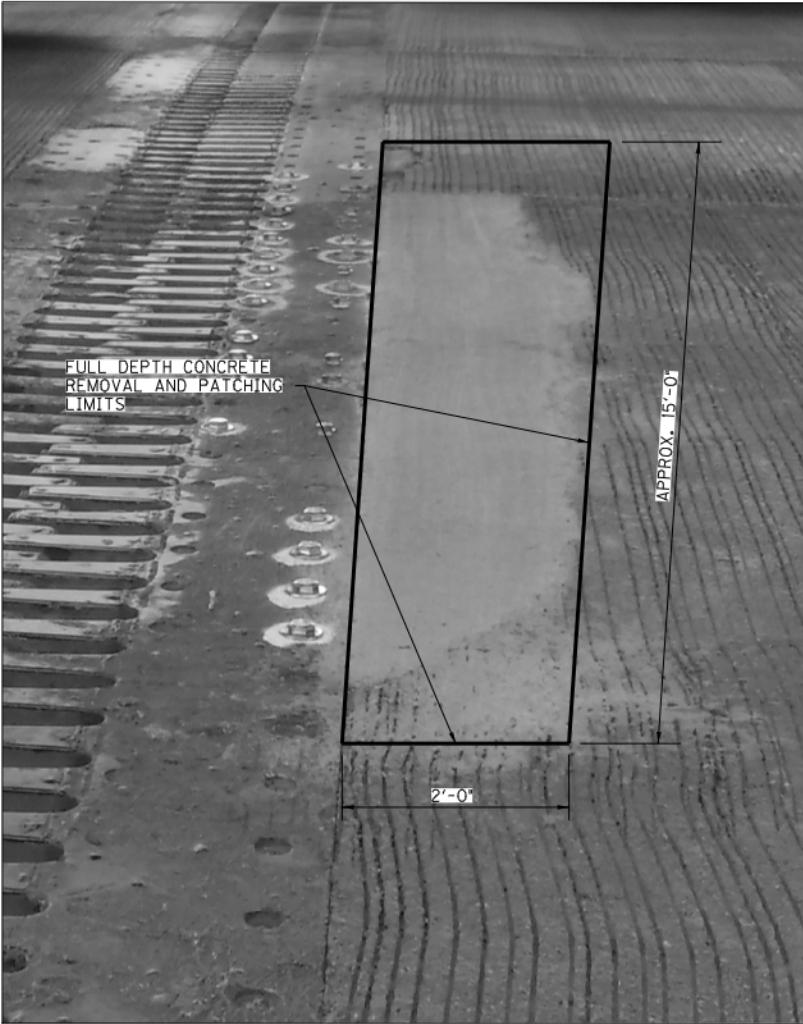
STRAP PLATE REPAIR

(LOWER DECK AT PP 17, RIGHT 2 LANES)



REPAIR LOCATION BEFORE EMERGENCY PATCH

(LOWER DECK AT PP 17, RIGHT 2 LANES)

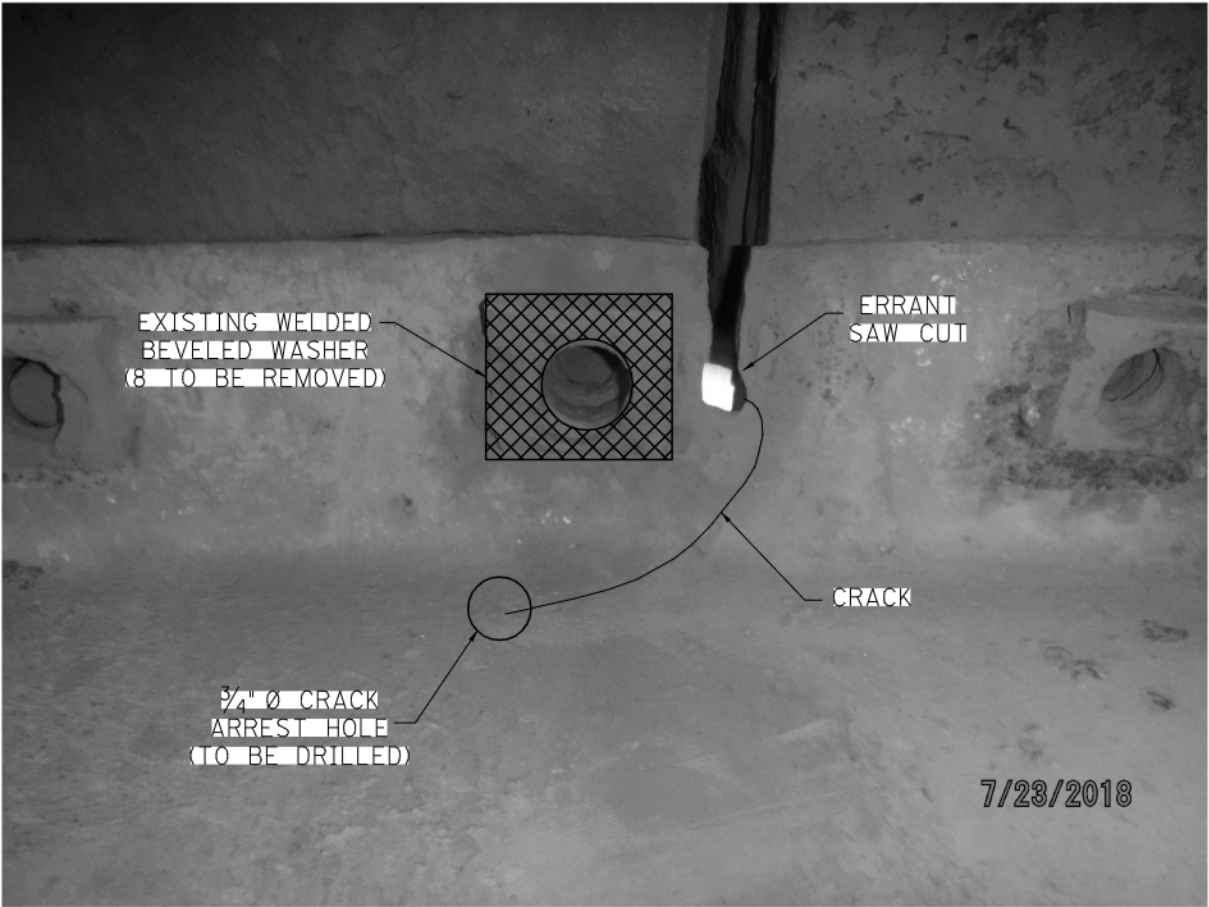


REPAIR LOCATION AFTER EMERGENCY PATCH

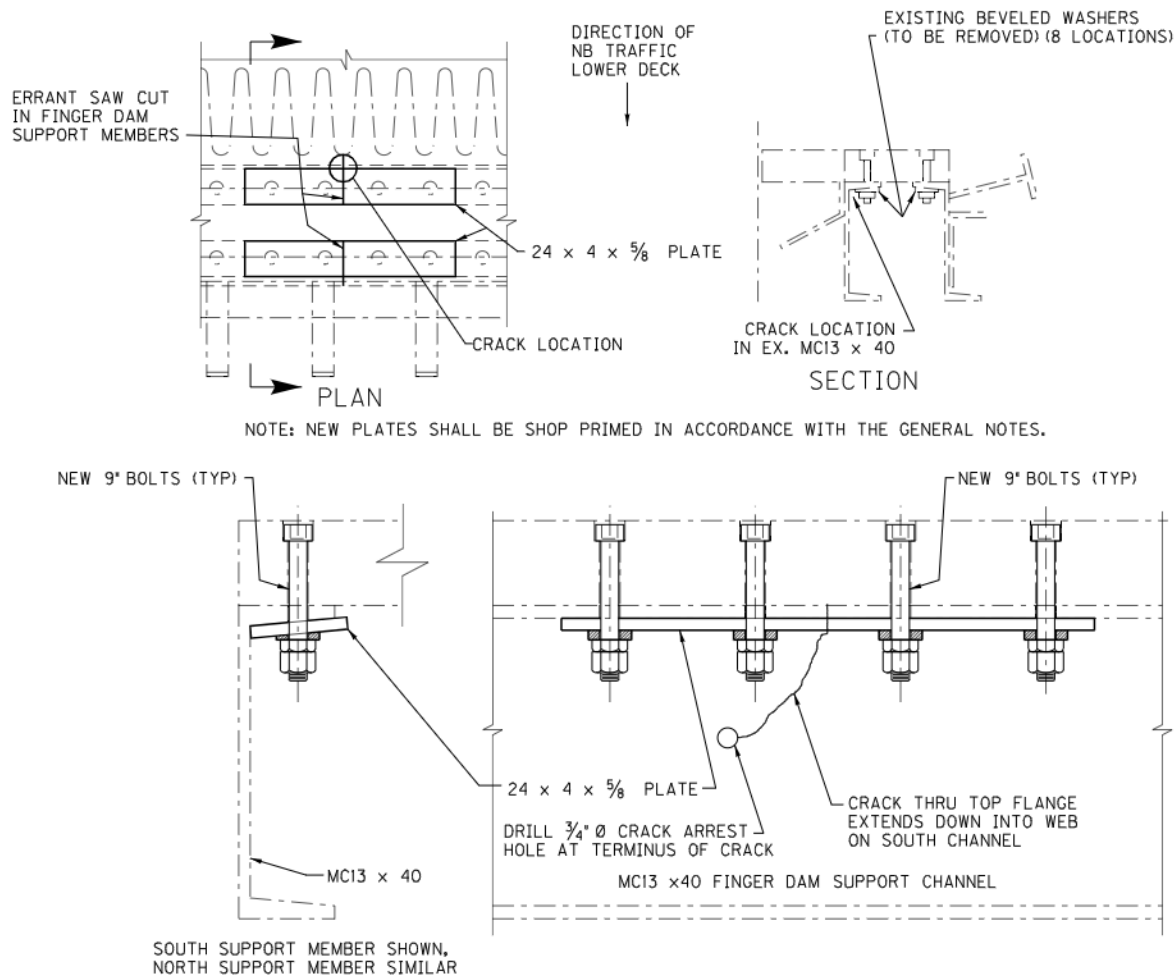
(LOWER DECK AT PP 17, RIGHT 2 LANES)

ITEM NUMBER
06-17.09
BRIDGE ID
059B00046N

REVISION		DATE
DATE: SEPTEMBER, 2020	CHECKED BY	
DESIGNED BY: R. DAMON	D. RUST	
DETAILED BY: J. ROSE	D. RUST	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY KENTON		
ROUTE	CROSSING	
I-71 / I-75	OHIO RIVER	
FINGER DAM STRAP PLATES		
PREPARED BY		SHEET NO. S10
PALMER ENGINEERING CO.		DRAWING NO. 28039



NOTE: PHOTO TAKEN LOOKING UP AND SOUTH AT MC13 x 40 FINGER DAM SUPPORT CHANNEL ON NORTH SIDE OF JOINT BEFORE TEMPORARY BOLTS WERE INSTALLED.



**FINGER DAM SUPPORT MEMBER
STRENGTHENING & CRACK REPAIR**

LOWER DECK AT PP 17, NORTH SIDE OF JOINT BETWEEN STRINGERS 3 & 4

NOTES:

1. FINGER DAM SUPPORT MEMBER: Work shall include maintaining and controlling traffic, removal of the existing nuts, bolts, and beveled washers, preparation of the existing surface, installation of plates with new nuts, bolts, and beveled washers, and drilling the crack arrest hole in the finger dam support channel as shown in the plans. This work shall include any labor, materials, equipment and any other Incidentals necessary to complete the work. Material removed shall not be allowed to fall into the river and must be disposed of to the satisfaction of the Engineer. The Contractor shall be responsible for any damage caused by falling debris. Steel shall be removed by mechanical means, or other methods approved by the Engineer. Any damage to the remaining structure resulting from the Contractor's operation shall be repaired by the Contractor to the satisfaction of the Engineer at no cost to the Department.
2. MAINTAIN AND CONTROL TRAFFIC: This work shall only be performed with the right two lanes of the lower deck closed to traffic.
3. REMOVAL OF EXISTING BOLTS, NUTS, AND WASHERS: Mechanically remove the bolts, nuts, and beveled washers as shown in the plans.
4. PREPARE THE SURFACE: Mechanically clean and prime the existing surfaces as directed by the general notes.
5. INSTALL COVER PLATES: Cover plates shall be ASTM A572 Grade 50 steel and match the dimensions shown in these plans. Holes drilled shall be standard size. New bolts, nuts, and washers shall be installed in accordance with procedure on Sheet S9.
6. DRILL CRACK ARREST HOLE: Drill the 3/4" diameter crack arrest hole at the terminus of the crack. The terminus of the crack shall be located by dye penetrant or magnetic particle testing. This testing shall be incidental to steel repair.

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DETAILED BY: J. ROSE	R. DAMON	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY KENTON		
ROUTE	CROSSING	
I-71 / I-75	OHIO RIVER	
FINGER DAM SUPPORT MEMBER		
PREPARED BY		SHEET NO.
PALMER ENGINEERING CO.		S11
		DRAWING NO.
		28039

APPROX. LIMITS
OF COVER PLATE

REMOVE AS NECESSARY
FOR ACCESS AND
REPLACE

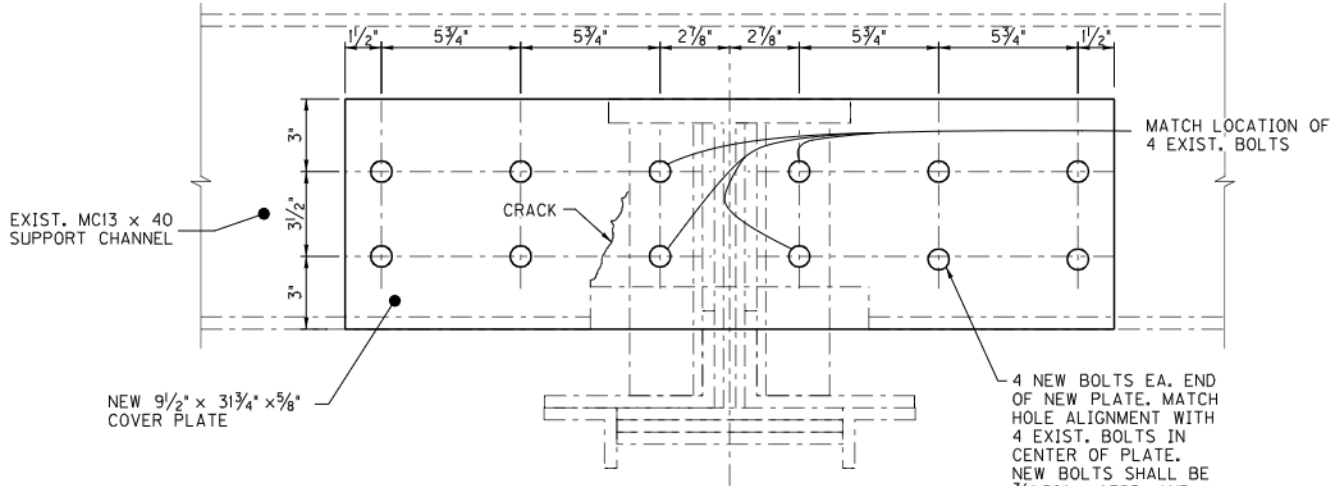
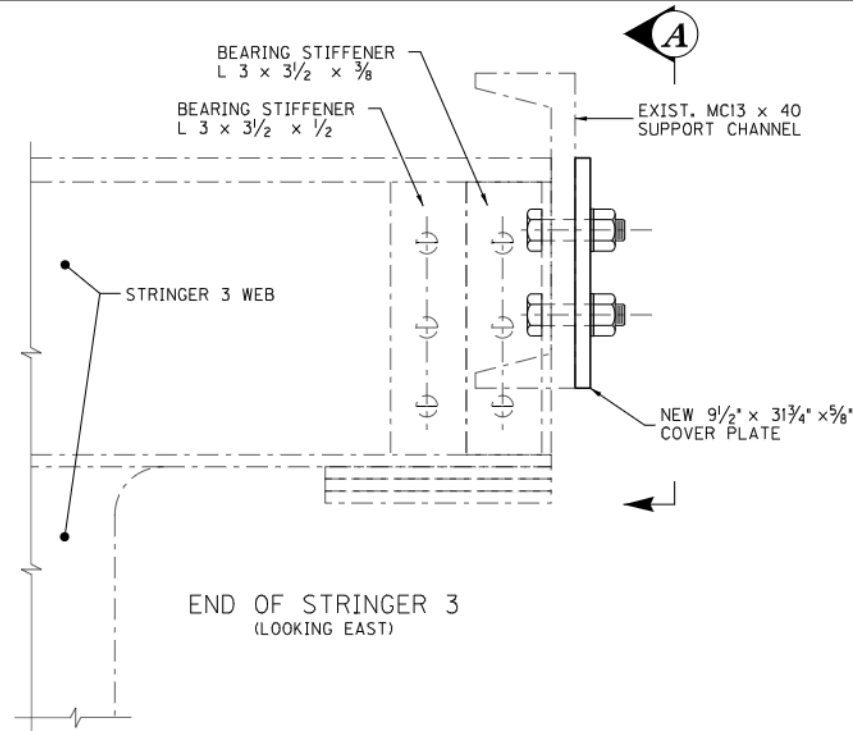


CRACKED SUPPORT CHANNEL REPAIR

LOWER DECK AT PP 17, STRINGER 3

NOTES:

- 1. CRACKED SUPPORT CHANNEL REPAIR:** Work shall include maintaining and controlling traffic, removal and reinstallation of the splash plate, removal of existing nuts and washers, preparation of the existing surface, and installation of the new cover plate as outlined in the plans. This work shall include any labor, materials, equipment and any other incidentals necessary to complete the work. Material removed shall not be allowed to fall into the river and must be disposed of to the satisfaction of the Engineer. The Contractor shall be responsible for any damage caused by falling debris. Steel shall be removed by mechanical means, or other methods approved by the Engineer. Any damage to the remaining structure resulting from the Contractor's operation shall be repaired by the Contractor to the satisfaction of the Engineer at no cost to the Department.
- 2. MAINTAIN AND CONTROL TRAFFIC:** This work shall only be performed with the right two lanes of the lower deck closed to traffic.
- 3. REMOVAL OF SPLASH PLATE:** Mechanically remove the splash plate in the vicinity of the repair as needed for repair access. Reinstall or replace in kind after repairs are completed.
- 4. REMOVAL OF EXISTING NUTS AND WASHERS:** Remove the nuts and washers from the four bolts connecting the finger dam support channel to the Stringer 3 bearing stiffener angles. Do not cut the bolts. Leave the four bolts in place.
- 5. PREPARE THE SURFACE:** Mechanically clean and prime the existing surfaces as directed by the general notes.
- 6. INSTALL COVER PLATE:** Cover plate shall be ASTM A572 Grade 50 steel and match the dimensions shown in these plans. Holes drilled shall be standard size for 7/8" diameter ASTM F3125 Grade A325 bolts with A563DH nuts and F436 flat washers. Hang the plate from the four existing bolts left in place. Install eight new bolts pretensioned per the specifications. Remove the four existing bolts, one at a time, and replace with new bolts pretensioned per the specifications. Only one open hole shall be allowed at any time.



VIEW "A"
(SHOWING CRACKED SUPPORT CHANNEL AND NEW COVER PLATE)

CRACKED SUPPORT CHANNEL REPAIR

LOWER DECK AT PP 17, STRINGER 3

ITEM NUMBER

06-17.09

BRIDGE ID

059B00046N

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DETAILED BY: J. ROSE		R. DAMON	
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS			
COUNTY KENTON			
ROUTE I-71 / I-75		CROSSING OHIO RIVER	
CRACKED SUPPORT CHANNEL			
PREPARED BY PALMER ENGINEERING CO.			SHEET NO. S12
			DRAWING NO. 28039